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EXAMINER	
FEELY, MICHAEL J	

ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/828,786	PATEL, BHARAT B.	
	Examiner	Art Unit	
	Michael J. Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12,14-29,31-49,51,53-64 and 66-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12,14-29,31-49,51,53-64 and 66-70* is/are rejected.

7)☒ Claim(s) *5,7,45 and 47* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1205*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claims 1-10, 12, 14-29, 31-49, 51, 53-64, and 66-70 are pending.

Previous Specification Objections

1. The disclosure was objected to for multiple reasons. The objection over the language, "a blend of one or more copolymers" has been withdrawn. The remaining objections have been overcome by amendment.

Previous Claim Objections

2. The claims were objected to for multiple reasons.

- The objection to claims 1-70, over the language, "a blend of one or more copolymers", has been overcome by amendment;
- The objection to claims 5, 7, 45, and 47 stands. The language --an aqueous fluid-- would appear to be the most appropriate language because it encompasses both "water" and "brine";
- The objection to claims 13 and 52 has been rendered moot by the cancellation of these claims;
- The objection to claims 29 and 64 has been overcome by amendment;
- The objection to claims 39-41 has been withdrawn; and
- The objection to claims 8-10, 48, and 49 has been overcome by amendment.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-7 and 43-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 42 disclose "a non-aqueous base fluid"; however, the scope of the base fluid *(see claims 3-7 and 43-47)* includes emulsions, specifically invert emulsions. These emulsions contain an aqueous phase; hence, it in unclear what defines "a non-aqueous base fluid." This language should be replaced with --oleaginous base fluid--.

Previous Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. The rejection of claims 1-6, 8-10, 19-20, 23-26, 28, 31-35, 42-46, 48-49, 56, 58-60, 61, 63, 66-68, and 70 under 35 U.S.C. 102(b) as being anticipated by Mitacek (US Pat. No. 3,140,747) has been overcome by amendment.

7. The rejection of claims 11 and 50 under 35 U.S.C. 102(b) as being anticipated by Newberry (US Pat. No. 4,518,509) has been rendered moot by the cancellation of these claims.

8. The rejection of claims 1, 2, 8-10, 12, 14, 15, 33, 42, 48, 49, 51, 53, 54, and 68 under 35 U.S.C. 102(b) as being anticipated by Newberry (US Pat. No. 4,518,509) has withdrawn.

Previous Claim Rejections - 35 USC § 103

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. The rejection of claims 11, 30, 50, and 65 under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US Pat. No. 4,306,980) in view of Carnicom (US Pat. No. 4,436,636) has been rendered moot by the cancellation of these claims.

11. The rejection of claims 27, 29, 62, and 64 under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US Pat. No. 4,306,980) in view of Carnicom (US Pat. No. 4,436,636) has been withdrawn.

12. The rejection of claims 1-10, 12, 14-26, 28, 31-49, 51, 53-61, 63, and 66-70 under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US Pat. No. 4,306,980) in view of Carnicom (US Pat. No. 4,436,636) stands.

Regarding claims 1-10, 12, 14, 15, 19-26, and 31-35, Brandt et al. discloses: ***(1)*** a drilling fluid composition, comprising: (I) an *oleaginous* base fluid (column 1, lines 27-56; column 2, lines 6-40); (II) one or more copolymers (column 1, lines 27-56; column 2, lines 41-60); wherein the copolymers are prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha, beta-ethylenically unsaturated carboxylic acid (column 1, lines 27-56; column 2, lines 41-60; column 4, lines 35-64);

(2) wherein the non-aqueous base fluid is selected from the group consisting of an oil, propylene glycol, modified ester, modified ether, and any combination thereof (column 1, lines 27-56; column 2, lines 6-40);

(3) wherein the non-aqueous base fluid comprises an emulsion (column 1, lines 27-56; column 2, lines 6-40); *(4)* wherein the emulsion comprises an invert emulsion (column 1, lines 27-56; column 2, lines 6-40); *(5)* wherein the invert emulsion comprises an oil, an *aqueous fluid*, and particulate solids (column 1, lines 27-56; column 2, lines 6-40); *(6)* wherein the oil is selected from the group consisting of diesel oil, mineral oil, olefins, modified olefins, and any combinations thereof (column 1, lines 27-56; column 2, lines 6-40); *(7)* wherein the water is brine (column 1, lines 27-56; column 2, lines 6-40);

(8) wherein the one or more copolymers comprises copolymers having a weight average molecular weight of greater than about 20,000 (column 4, lines 35-64);

(9) wherein the one or more copolymers comprises copolymers having a weight average molecular weight of greater than about 21,000 (column 4, lines 35-64);

(10) wherein the one or more copolymers comprises copolymers having a weight average molecular weight of greater than about 25,000 (column 4, lines 35-64);

(12) wherein the at least one alpha-olefin comprises between two and twenty-five carbon atoms (column 1, lines 27-56; column 2, lines 41-60; column 4, lines 35-64);

(14) wherein the anhydride comprises maleic anhydride (column 1, lines 27-56; column 2, lines 41-60; column 4, lines 35-64);

(15) wherein the alpha, beta-ethylenically unsaturated carboxylic acid is selected from the group consisting of acrylic acid, crotonic acid, itaconic acid, methacrylic acid, ethacrylic acid, maleic acid, fumaric acid, and any combination thereof (column 1, lines 27-56; column 2, lines 41-60; column 4, lines 35-64);

(23) further comprising one or more additives (column 3, lines 53-66); ***(24)*** wherein the one or more additives comprises a clay-base material (column 3, lines 53-66); ***(25)*** wherein the clay-based material comprises a rheologically active clay (column 3, lines 53-66); ***(26)*** wherein the rheologically active clay is selected from the group consisting of organoclays, smectite clays, and combinations thereof (column 3, lines 53-66); ***(31)*** wherein the one or more additives comprise a weighting agent (column 3, lines 53-66); ***(32)*** wherein the weighting agent is selected from the group consisting of barite, galena, hematite, dolomite, calcite, and any combinations thereof (column 3, lines 53-66);

(33) wherein the drilling fluid composition comprises between about 0 weight percent to about 25 weight percent water (column 2, lines 25-40);

(34) wherein the drilling fluid composition comprises between about 1 weight percent to about 20 weight percent water (column 2, lines 25-40); and

(35) wherein the drilling fluid composition comprises between about 2 weight percent to about 15 weight percent water (column 2, lines 25-40).

The invert emulsion of Brandt et al. exhibits, "excellent rheological, *suspension, emulsion stability* and filtration control," (column 1, lines 34-37); however, they fail to disclose the use of ***polyethylene*** in their invert emulsion.

Carnicom also discloses an invert emulsion featuring: ***(1)*** (III) polyethylene (Abstract; column 1, lines 28-65); ***(19)*** wherein the polyethylene has a melt index of less than about 10 (Abstract; column 1, lines 28-65); ***(20)*** wherein the polyethylene has a melt index o less than about 5 (Abstract; column 1, lines 28-65); ***(21)*** wherein the polyethylene has an average particle size of less than about 0.06 inches (Abstract; column 1, lines 28-65); and ***(22)*** wherein the

polyethylene has an average particle size of less than about 0.03 inches (Abstract; column 1, lines 28-65).

The invert emulsion of Carnicom also exhibits excellent *suspension* and *emulsion stability*, wherein the invert emulsion exhibits minimized oil phase separation, minimizes solids settling, and has reduced fluid loss (column 1, lines 39-46).

In light of this, it has been found that, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invert emulsions of Brandt et al. and Carnicom because they are both useful as well servicing fluids with beneficial suspension and emulsion stability. Such stability results in minimized oil phase separation, minimized solids settling, and reduced fluid loss. The idea of combining these two invert emulsions flows logically from their having been individually taught in the prior art.

Regarding claim 28, Brandt et al. disclose the use of additives, including rheologically active clay *(see column 3, lines 63-66)*. However, they fail to explicitly disclose the use of bentonite.

The analogous nature of Carnicom is as set forth above and incorporated herein. Carnicom also disclose the use of rheologically active clays, such as smectite clays, including bentonite *(see column 3, lines 31-39)*. The teachings of Carnicom establish that bentonite clays

are recognized in the art as suitable rheologically active clay additives for invert emulsion well servicing fluids.

In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use bentonite as a rheologically active clay additive in the combined teachings of Brandt et al. and Carnicom because the teachings of Carnicom establish that bentonite clays are recognized in the art as suitable rheologically active clay additives for invert emulsion well servicing fluids.

Regarding claims 42-49, 51, 53, 54, 56-61, 63, and 66-68, the combined teachings of Brandt et al. and Carnicom are as set forth above and incorporated herein to satisfy the limitations of claims 42-49, 51, 53, 54, 56-61, 63, and 66-68.

Regarding claims 36-41 and 69, the combined teachings of Brandt et al. and Carnicom fail to explicitly disclose: ***(36 & 69)*** wherein the composition comprises high pressure high temperature fluid loss characteristics of less than about 7.2 ml/30 minutes; ***(37)*** wherein the composition comprises high pressure high temperature fluid loss characteristics of less than about 6.5 ml/30 minutes; ***(38)*** wherein the composition comprises high pressure high temperature fluid loss characteristics of less than about 6.0 ml/30 minutes; ***(39)*** wherein the composition has settling of between about 0% and 25%; ***(40)*** wherein the composition has settling of between about 0% and 20%; and ***(41)*** wherein the composition has settling of between about 0% and 15%.

However, these properties would appear to the inherent result of combining these two invert emulsions. It has been found that, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Therefore, the claimed property limitations of fluid loss and settling would have been an inherent result of the obvious combination of Brandt et al. and Carnicom, which satisfies the chemical/material limitations of the instantly claimed invention. It appears that the influence of the copolymer and the polyethylene in the obvious combination would have inherently resulted in a combinatory or synergistic property set that is in accord with the instantly claimed invention because all of the chemical/material limitations would have been satisfied.

Regarding claims 16-18 and 55, the combined teachings of Brandt et al. and Carnicom fail to explicitly disclose: ***(16 & 55)*** wherein the composition comprises between about 0.05 weight percent and 1.0 weight percent of the one or more copolymers; ***(17)*** wherein the composition comprises between about 0.075 weight percent and 0.75 weight percent of the one or more copolymers; ***(18)*** wherein the composition comprises between about 0.1 weight percent and 0.5 weight percent of the one or more copolymers.

It should be noted that the Applicant fails to demonstrate critically for these concentration ranges. Furthermore, Brandt et al. establish that the amount of copolymer is a result effective variable *(see column 2, line 61 through column 3, line 23)*, ensuring the desired physical

properties of the invert emulsion *(excellent rheological, suspension, emulsion stability and filtration control).*

In light of this, it has been found that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the copolymer in the instantly claimed concentration ranges in the combined teachings of Brandt et al. and Carnicom because Brandt et al. establish that the amount of this copolymer is a result effective variable, ensuring the desired physical properties of the invert emulsion *(excellent rheological, suspension, emulsion stability and filtration control).* The optimization of such a variable has been found to be not inventive.

Regarding claim 70, the combined teachings of Brandt et al. and Carnicom are as set forth above and incorporated herein to satisfy the limitations of claim 70.

13. The rejection of claims 11, 13, 30, 50, 52, and 65 under 35 U.S.C. 103(a) as being unpatentable over McNally et al. (US Pat. No. 6,159,906) in view of Carnicom (US Pat. No. 4,436,636) has been rendered moot by the cancellation of these claims.

14. The rejection of claims 29 and 64 under 35 U.S.C. 103(a) as being unpatentable over McNally et al. (US Pat. No. 6,159,906) in view of Carnicom (US Pat. No. 4,436,636) has been withdrawn.

15. The rejection of claims 1-10, 12, 14-28, 31-49, 51, 53-63, and 66-70 under 35 U.S.C. 103(a) as being unpatentable over McNally et al. (US Pat. No. 6,159,906) in view of Carnicom (US Pat. No. 4,436,636) stands.

Regarding claims 1-7, 12, 14, 15, 19-28, 31, and 33-35, McNally et al. disclose: ***(1)*** a drilling fluid composition, comprising: (I) an *oleaginous* base fluid (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6); (II) one or more copolymers (Abstract; column 6, lines 7-62); wherein the copolymers are prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha, beta-ethylenically unsaturated carboxylic acid (Abstract; column 6, lines 7-62);

(2) wherein the non-aqueous base fluid is selected from the group consisting of an oil, propylene glycol, modified ester, modified ether, and any combination thereof (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6);

(3) wherein the non-aqueous base fluid comprises an emulsion (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6); ***(4)*** wherein the emulsion comprises an invert emulsion (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6); ***(5)*** wherein the invert emulsion comprises an oil, an *aqueous fluid*, and particulate solids (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6); ***(6)*** wherein the oil is selected from the group consisting of diesel oil, mineral oil, olefins, modified olefins, and any combinations thereof (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line

6); *(7)* wherein the water is brine (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6);

(12) wherein the at least one alpha-olefin comprises between two and twenty-five carbon atoms (Abstract; column 6, lines 7-62);

(14) wherein the anhydride comprises maleic anhydride (Abstract; column 6, lines 7-62);

(15) wherein the alpha, beta-ethylenically unsaturated carboxylic acid is selected from the group consisting of acrylic acid, crotonic acid, itaconic acid, methacrylic acid, ethacrylic acid, maleic acid, fumaric acid, and any combination thereof (Abstract; column 6, lines 7-62);

(23) further comprising one or more additives (column 8, lines 17-52); *(24)* wherein the one or more additives comprises a clay-base material (column 8, lines 35-39); *(25)* wherein the clay-based material comprises a rheologically active clay (column 8, lines 35-39); *(26)* wherein the rheologically active clay is selected from the group consisting of organoclays, smectite clays, and combinations thereof (column 8, lines 35-38); *(27)* wherein the rheologically active clay comprises hectorite (column 8, lines 35-38); *(28)* wherein the rheologically active clay comprises bentonite (column 8, lines 35-38); *(31)* wherein the one or more additives comprise a weighting agent (column 8, lines 28-34);

(33) wherein the drilling fluid composition comprises between about 0 weight percent to about 25 weight percent water (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6);

(34) wherein the drilling fluid composition comprises between about 1 weight percent to about 20 weight percent water (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6); and

(35) wherein the drilling fluid composition comprises between about 2 weight percent to about 15 weight percent water (Abstract; column 3, lines 9-27; column 7, line 66 through column 8, line 6).

The invert emulsion of McNally et al. exhibits, "improved *suspension* and *anti-settling* properties for containing various solid particles, including bore-hole cuttings," (column 5, lines 41-43); however, they fail to disclose the use of ***polyethylene*** in their invert emulsion.

Carnicom also discloses an invert emulsion featuring: ***(1)*** polyethylene (Abstract; column 1, lines 28-65); ***(19)*** wherein the polyethylene has a melt index of less than about 10 (Abstract; column 1, lines 28-65); ***(20)*** wherein the polyethylene has a melt index o less than about 5 (Abstract; column 1, lines 28-65); ***(21)*** wherein the polyethylene has an average particle size of less than about 0.06 inches (Abstract; column 1, lines 28-65); and ***(22)*** wherein the polyethylene has an average particle size of less than about 0.03 inches (Abstract; column 1, lines 28-65).

The invert emulsion of Carnicom also exhibits excellent *suspension* and *emulsion stability*, wherein the invert emulsion exhibits minimized oil phase separation, minimizes solids settling, and has reduced fluid loss (column 1, lines 39-46).

In light of this, it has been found that, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invert emulsions of McNally et al. and Carnicom because they are both

useful as well servicing fluids with beneficial suspension and emulsion stability. Such stability results in minimized oil phase separation, minimized solids settling, and reduced fluid loss. The idea of combining these two invert emulsions flows logically from their having been individually taught in the prior art.

Regarding claim 32, McNally et al. disclose the use of additives, including weighting agents *(see column 8, lines 28-34)*. However, they fail to explicitly disclose the use of weighting agents selected from the group consisting of barite, galena, hematite, dolomite, calcite, and any combinations thereof.

The analogous nature of Carnicom is as set forth above and incorporated herein. Carnicom also disclose the use of weighting agents, such as barite *(see column 4, lines 3-11)*. The teachings of Carnicom establish that barite is recognized in the art as a suitable weighting agent for invert emulsion well servicing fluids.

In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use barite as a weighting agent in the combined teachings of McNally et al. and Carnicom because the teachings of Carnicom establish that barite is recognized in the art as a suitable weighting agent for invert emulsion well servicing fluids.

Regarding claims 42-47, 51, 53, 54, 56-63, and 66-68, the combined teachings of McNally et al. and Carnicom are as set forth above and incorporated herein to satisfy all the limitations of claims 42-47, 51, 53, 54, 56-63, and 66-68.

Regarding claims 8-10, 48, and 49, McNally et al. do not disclose: ***(8 & 48)*** wherein the one or more copolymers comprises copolymers having a weight average molecular weight of greater than about 20,000; ***(9)*** wherein the one or more copolymers comprises copolymers having a weight average molecular weight of greater than about 21,000; ***(10 & 49)*** wherein the one or more copolymers comprises copolymers having a weight average molecular weight of greater than about 25,000.

It should be noted that the Applicant fails to demonstrate critically for these molecular weight ranges. Furthermore, one of ordinary skill in the art would have recognized that this molecular weight range is a result effective variable, influencing overall viscosity of the invert emulsion.

In light of this, it has been found that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the copolymer, having the instantly claimed molecular weight ranges, in the combined teachings of McNally et al. and Carnicom because one of ordinary skill in the art would have recognized that this molecular weight range is a result effective variable, influencing

overall viscosity of the invert emulsion. The optimization of such a variable has been found to be not inventive.

Regarding claims 36-41 and 69, the combined teachings of McNally et al. and Carnicom fail to explicitly disclose: ***(36 & 69)*** wherein the composition comprises high pressure high temperature fluid loss characteristics of less than about 7.2 ml/30 minutes; ***(37)*** wherein the composition comprises high pressure high temperature fluid loss characteristics of less than about 6.5 ml/30 minutes; ***(38)*** wherein the composition comprises high pressure high temperature fluid loss characteristics of less than about 6.0 ml/30 minutes; ***(39)*** wherein the composition has settling of between about 0% and 25%; ***(40)*** wherein the composition has settling of between about 0% and 20%; and ***(41)*** wherein the composition has settling of between about 0% and 15%.

However, these properties would appear to the inherent result of combining these two invert emulsions. It has been found that, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Therefore, the claimed property limitations of fluid loss and settling would have been an inherent result of the obvious combination of McNally et al. and Carnicom, which satisfies the chemical/material limitations of the instantly claimed invention. It appears that the influence of the copolymer and the polyethylene in the obvious combination would have inherently resulted

in a combinatory or synergistic property set that is in accord with the instantly claimed invention because all of the chemical/material limitations would have been satisfied.

Regarding claims 16-18 and 55, the combined teachings of McNally et al. and Carnicom fail to explicitly disclose: ***(16 & 55)*** wherein the composition comprises between about 0.05 weight percent and 1.0 weight percent of the one or more copolymers; ***(17)*** wherein the composition comprises between about 0.075 weight percent and 0.75 weight percent of the one or more copolymers; ***(18)*** wherein the composition comprises between about 0.1 weight percent and 0.5 weight percent of the one or more copolymers.

It should be noted that the Applicant fails to demonstrate critically for these concentration ranges. Furthermore, McNally et al. establish that the amount of copolymer is a result effective variable *(see column 8, lines 7-16)*, ensuring the desired stability of the invert emulsion.

In light of this, it has been found that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the copolymer in the instantly claimed concentration ranges in the combined teachings of McNally et al. and Carnicom because McNally et al. establish that the amount of

this copolymer is a result effective variable, ensuring the desired stability of the invert emulsion. The optimization of such a variable has been found to be not inventive.

Regarding claim 70, the combined teachings of McNally et al. and Carnicom are as set forth above and incorporated herein to satisfy the limitations of claim 70.

New Claim Rejections - 35 USC § 103

16. Claims 29 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US Pat. No. 4,306,980) and Carnicom (US Pat. No. 4,436,636) in view of Patel et al. (Pub. No. US 2001/0009890).

Regarding claims 29 and 64, the combined teachings of Brandt et al. and Carnicom disclose the use of additives, including fluid loss control agents, in their invert emulsion. However, they fail to explicitly disclose: ***(29 & 64)*** one or more additives comprising a black material selected from the group consisting of lignite, salt of lignite, organophilic lignite, asphalt, salt of sulfonated asphalt, gilsonite, graphite, ground tires, and any combination thereof.

Patel et al. disclose an analogous invert emulsion *(see Abstract)*. They further disclose the addition of fluid loss control agents, wherein suitable fluid loss control agents include, "modified lignite, polymers, oxidized asphalt and gilsonite," *(see paragraph 0039)*. The teachings of Patel et al. establish that modified lignite, polymers, oxidized asphalt and gilsonite are recognized in the art as a suitable fluid loss control agents for invert emulsion well servicing fluids.

In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use modified lignite, polymers, oxidized asphalt and gilsonite as fluid loss control agents in the combined teachings of Brandt et al. and Carnicom because the teachings of Patel et al. establish that modified lignite, polymers, oxidized asphalt and gilsonite are recognized in the art as a suitable fluid loss control agents for invert emulsion well servicing fluids.

17. Claims 27 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US Pat. No. 4,306,980) and Carnicom (US Pat. No. 4,436,636) in view of McNally et al. (US Pat. No. 6,159,906).

Regarding claims 27 and 62, the combined teachings Brandt et al. and Carnicom disclose the use of additives, including rheologically active clay. However, they fail to explicitly disclose the use of ***(27 & 62)*** hectorite.

The analogous nature of McNally et al. is as set forth above and incorporated herein. McNally et al. also disclose the use of rheologically active clays, such as smectite clays, including bentonite and hectorite *(see column 8, lines 35-39)*. The teachings of McNally et al. establish that hectorite clays are recognized in the art as suitable rheologically active clay additives for invert emulsion well servicing fluids.

In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use hectorite as a rheologically active clay in the combined teachings of Brandt et al. and Carnicom because the teachings of McNally et al. establish that hectorite clays are recognized in the art as suitable rheologically active clay additives for invert emulsion well servicing fluids.

18. Claims 29 and 64 rejected under 35 U.S.C. 103(a) as being unpatentable over McNally et al. (US Pat. No. 6,159,906) and Carnicom (US Pat. No. 4,436,636) in view of Patel et al. (Pub. No. US 2001/0009890).

Regarding claims 29 and 64, the combined teachings of McNally et al. and Carnicom disclose the use of additives, including fluid loss control agents, in their invert emulsion. However, they fail to explicitly disclose: ***(39 & 64)*** one or more additives comprising a black material selected from the group consisting of lignite, salt of lignite, organophilic lignite, asphalt, salt of sulfonated asphalt, gilsonite, graphite, ground tires, and any combination thereof.

Patel et al. disclose an analogous invert emulsion *(see Abstract)*. They further disclose the addition of fluid loss control agents, wherein suitable fluid loss control agents include, "modified lignite, polymers, oxidized asphalt and gilsonite," *(see paragraph 0039)*. The teachings of Patel et al. establish that modified lignite, polymers, oxidized asphalt and gilsonite

are recognized in the art as a suitable fluid loss control agents for invert emulsion well servicing fluids.

In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use modified lignite, polymers, oxidized asphalt and gilsonite as fluid loss control agents in the combined teachings of McNally et al. and Carnicom because the teachings of Patel et al. establish that modified lignite, polymers, oxidized asphalt and gilsonite are recognized in the art as a suitable fluid loss control agents for invert emulsion well servicing fluids.

Response to Arguments

19. Applicant's arguments filed February 9, 2006, with respect to the combined teachings of Brandt et al. and Carnicom, have been fully considered but they are not persuasive.

Applicant points to his working examples and discusses how the following Examples measure up to Control Example 1 (containing no copolymer and no polyethylene):

- Examples 2 & 3: copolymer only (similar to Brandt et al.);
- Examples 4-7: blend of copolymer and polyethylene (instant invention); and
- Examples 8 & 9: polyethylene only (similar to Carnicom).

They argue that only the claimed drilling fluid (Examples 4-7) exhibits superior results compared to Control Example 1.

This is simply not the case. Examples 2-7 show improvement in initial gel strength over Control Example 1 *(see Table 2 on page 15)*; Examples 2-9 show a significant improvement in settling % over Control Example 1 *(see Table 3 on page 16)*; and Examples 2-7 show improvement in secondary gel strength over Control Example 1 *(see Table 4 on pages 16-17)*. Furthermore, the properties of Examples 4-7 appear to be little more than a combinatory property resulting from the combination of: the materials of Examples 2 & 3 (Brandt et al.); and the materials of Examples 8 & 9 (Carnicom).

Applicant also argues that there is no motivation to combine these two references. This is not persuasive because the working examples demonstrate that the prior art references are equivalent in nature. Both provide enhanced stability to invert emulsions *(see Table 3 on page 16)*, resulting in decreased settling. Hence, this appears to be a situation that fits the decision set forth in *In re Kerkhoven:* "It is *prima facie* obvious to combine two compositions each of which

is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

20. Applicant's arguments filed February 9, 2006, with respect to the combined teachings of McNally et al. and Carnicom, have been fully considered but they are not persuasive.

Applicant relies on the same arguments used with respect to the combined teachings of Brandt et al. and Carnicom. Hence, these arguments are not persuasive for the reasons set forth above.

Furthermore, it should be noted that McNally et al. disclose, "The compositions of the invention are useful, for example, in imparting anti-settling properties to a wide variety of oil-based invert emulsion drilling fluids including fluids based on diesel, mineral oil and synthetic base fluids. Invert emulsion drilling fluids and their components are described at length in **U.S. Pat. No. 4,435,636**, obtained by NL Industries, Inc., the parent company of the assignee herein," *(see column 7, line 66 through column 8, line 6)*.

This patent number corresponds to a patent entitled "Desoldering Tool". Hence, this appears to be a typographical error. It should also be noted that the Carnicom reference is owned by NL Industries, Inc., and it is **U.S. Pat. No. 4,436,636**. Based on the apparent typographical error, the teachings of McNally et al. do in fact provide motivation to combine their teachings with the teachings of Carnicom.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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April 21, 2006

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PRIMARY EXAMINER